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Illinois  
Environmental  
Protection Agency

Division of Public Water Supplies  
2200 Churchill Road  
Springfield, Illinois 62706

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# Groundwater Quality Protection Program

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Hudson  
FACILITY NUMBER 1130700  
WELL SITE SURVEY REPORT

Division of Public Water Supplies





IEPA/PWS/ 92-087

GROUNDWATER QUALITY PROTECTION PROGRAM:

Hudson  
FACILITY NUMBER 1130700  
WELL SITE SURVEY REPORT

Presented by:

Division of Public Water Supplies

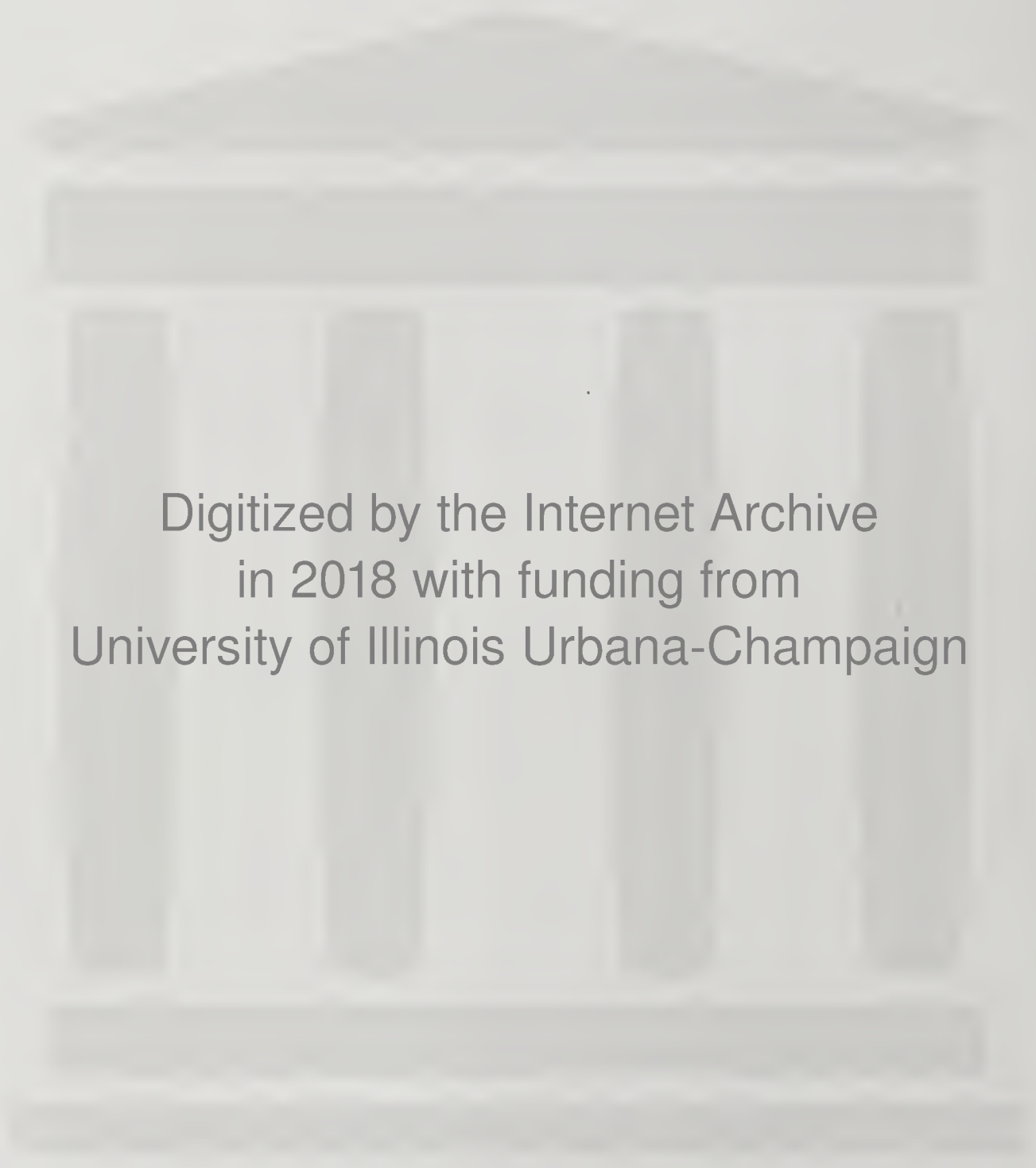
Published by:

Illinois Environmental Protection Agency  
Springfield, Illinois

June, 1992

Printed on Recycled Paper





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TABLE OF CONTENTS

- I. Introduction
- II. Facility Description and Geologic Profile of Well Sites
- III. Groundwater Sampling and Monitoring History
- IV. Well Site Survey Methods and Procedures
- V. Summary
- VI. Recommendations
- VII. Technical Appendices
  - A. Topographic Map Displaying Hudson Well Locations
  - B. Aerial Photographic Map
    - 1. Hudson Well #1 (IEPA #47629) Summary Description and Unit Inventory
    - 2. Hudson Well #2 (IEPA #47630) Summary Description and Unit Inventory
  - C. Facility Wells Report
  - D. Detailed Sampling/Monitoring Results



## INTRODUCTION

This report has been prepared by the Illinois Environmental Protection Agency (Agency) pursuant to Section 17.1 of the Illinois Environmental Protection Act (Act). The report summarizes information about your facility and samples collected and analyzed from your well(s). The well site survey provides an inventory of the area around the well(s) to help increase your awareness of potential hazards to the groundwater utilized by your facility. This information and technical data will assist you in developing and implementing local groundwater protection measures authorized by the Act.

## FACILITY DESCRIPTION AND GEOLOGIC PROFILE OF WELL SITES

Hudson obtains its water from the Bloomington PWS. Two drift wells are kept as a backup supply. See Table I for a description of each well. The surficial geologic susceptibility rating for both wells is E. The aquifer is overlain by low permeability silty/clayey till. Permeability is a measure of the ability of a soil or sediment to transmit fluids. A complete description and geologic profile is found in the Facility Wells Report (Appendix C).

TABLE 1

	Minimum Setback (ft.)	Maximum Setback (ft.)	Status	Capacity (gpm) (MGD)	Specific Capacity (gpm/ft.)	Treatment	Aquifer	Well Depth (ft.)	Well Logs Avail.
Well 1 (47629)	200	No	SB	65 0.094		None	Sand and Gravel	160	No
Well 2 (47630)	200	No	SB	200 0.288		Same	Same	96	No

SB-Standby

## GROUNDWATER SAMPLING/ MONITORING HISTORY

Hudson Wells #1 and #2 were not sampled as part of a Statewide Groundwater Monitoring Program. Operator collected inorganic (IOC) analyses indicate that parameters are consistent with other sand and gravel aquifers in Illinois (Appendix D).



## SURVEY METHODS AND PROCEDURES

The detailed well site survey consists of an aerial photographic map and inventory sheets (Appendix B), that relate information about potential sources, routes and possible problem sites to your water supply well(s). The location of potential sources, routes, possible problem sites, water supply wells, minimum setback zones, and 1,000 foot survey area are all displayed on the aerial photographic map.

The first page of each survey consists of a summary description and geologic profile for each well. The second and following pages of the survey inventory units within and bordering a 1,000 foot radius of the wellhead. A unit is defined as any device, mechanism, equipment, or area (exclusive of land utilized for agricultural production). The Agency five-digit well number is associated with a unit or map code, and then classified. The classification codes relate to definitions of potential contamination sources and routes as defined in the Illinois Groundwater Protection Act (see Groundwater Primer pages 18-19). The distance and direction of the unit from the wellhead is also indicated.

### Survey Results and Findings:

The Hudson well site survey was conducted on January 31, 1992 by Wade Boring from the Agency's Springfield Office. The following describes the results and findings for the Hudson public water wells:

#### Hudson Well #1 (IEPA #47629)

The survey area is mostly rural. The area is a mixture of row crops, residential and commercial. There are five possible problem sites located within 1,500 feet of Well #1. They are McGrath Inc. (map code 1) 700 ft. N, Sun Ag Inc. (map code 2) 320 ft. SW, Casey's (map code 3) 350 ft. SE, the Hudson TWP garage (map code 4) 400 ft. S and Hudson Elementary School (map code 5) 1,200 ft. SE.

#### Hudson Well #2 (IEPA #47630)

The survey area is mostly rural. The area is a mixture of row crops, residential and commercial. There are three possible problem sites within 1,500 feet of Well #2. They are Casey's (map code 3) 1,400 ft. N, the TWP garage (map code 4) 1,250 ft. NNW and the Elementary School (map code 5) 650 ft. NE.



### SUMMARY

The well site survey conducted indicates that there are potential sources/sites that could pose a hazard to grounder utilized by the Hudson public water wells.

- . Four sites with below ground fuel storage; McGrath Inc., Sun Ag Inc., Casey's, the Hudson TWP garage and Hudson Elementary School.
- . One site with above ground storage of fertilizers and pesticides; Sun Ag Inc.

The Act provides minimum protection zones for your wells. These minimum protection zones are regulated by the Agency. The Act also authorizes county and municipal officials the opportunity to provide maximum protection zones up to 1,000 feet. The responsibility for the control would then be assumed by the local officials through adoption of a maximum setback zone ordinance.

### RECOMMENDATIONS

The Agency strongly urges Hudson to consider establishing maximum setback zones for its wells. The Agency has prepared a "Maximum Setback Zone Workbook" which provides detailed case studies of how to establish a maximum setback zone. Technical assistance is available from the Agency and the Illinois State Water Survey.

If no further use of the wells is expected, the Agency suggests that Hudson consider properly abandoning them in accordance with Dept. of Public Health rules and regs.



## **TECHNICAL APPENDICES**



Green Lake  
ION 715

# APPENDIX A - Topographic Map of Hudson (1130700) Well Location



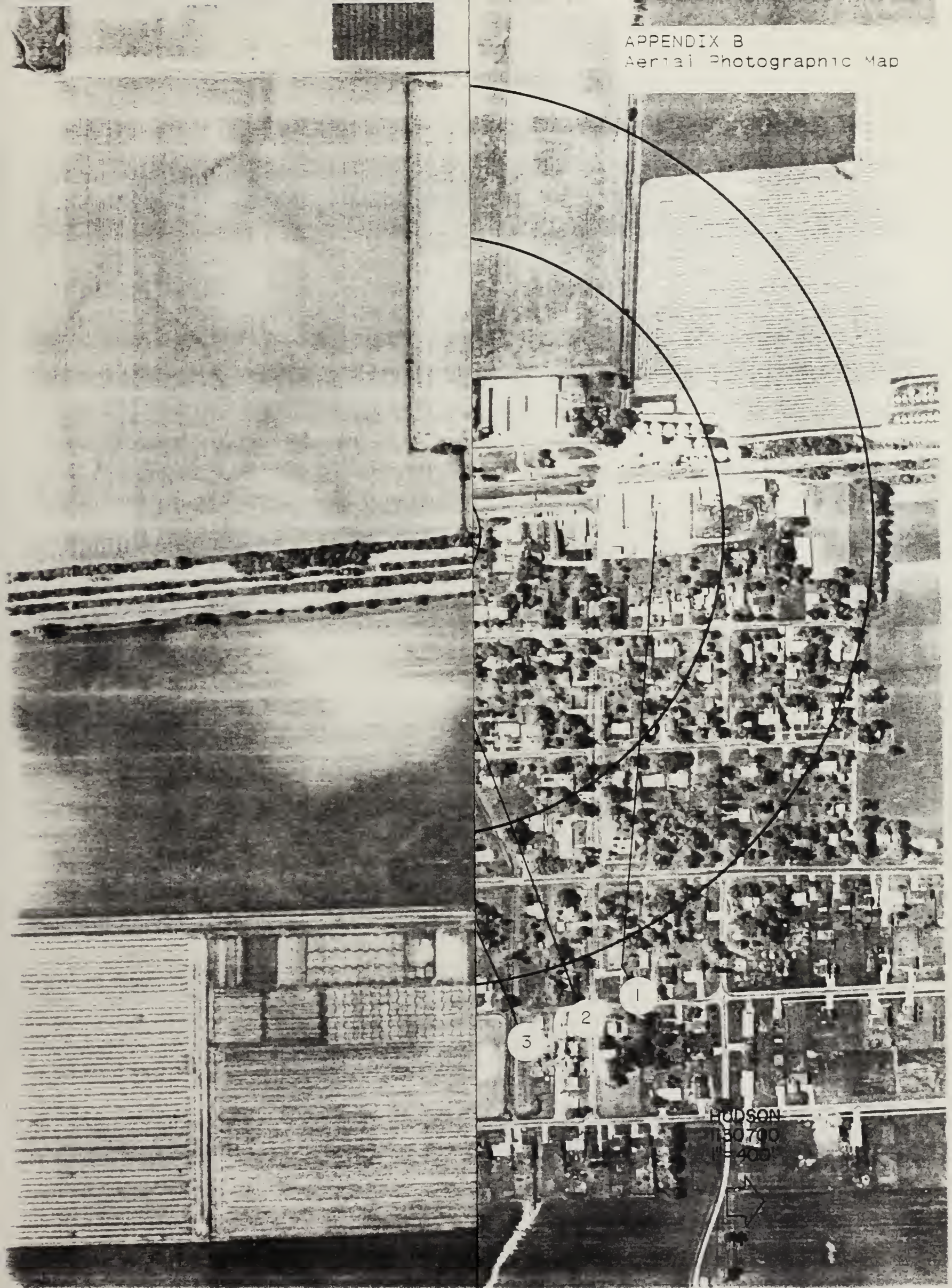
NORTH  
SCALE: 1"=2000'







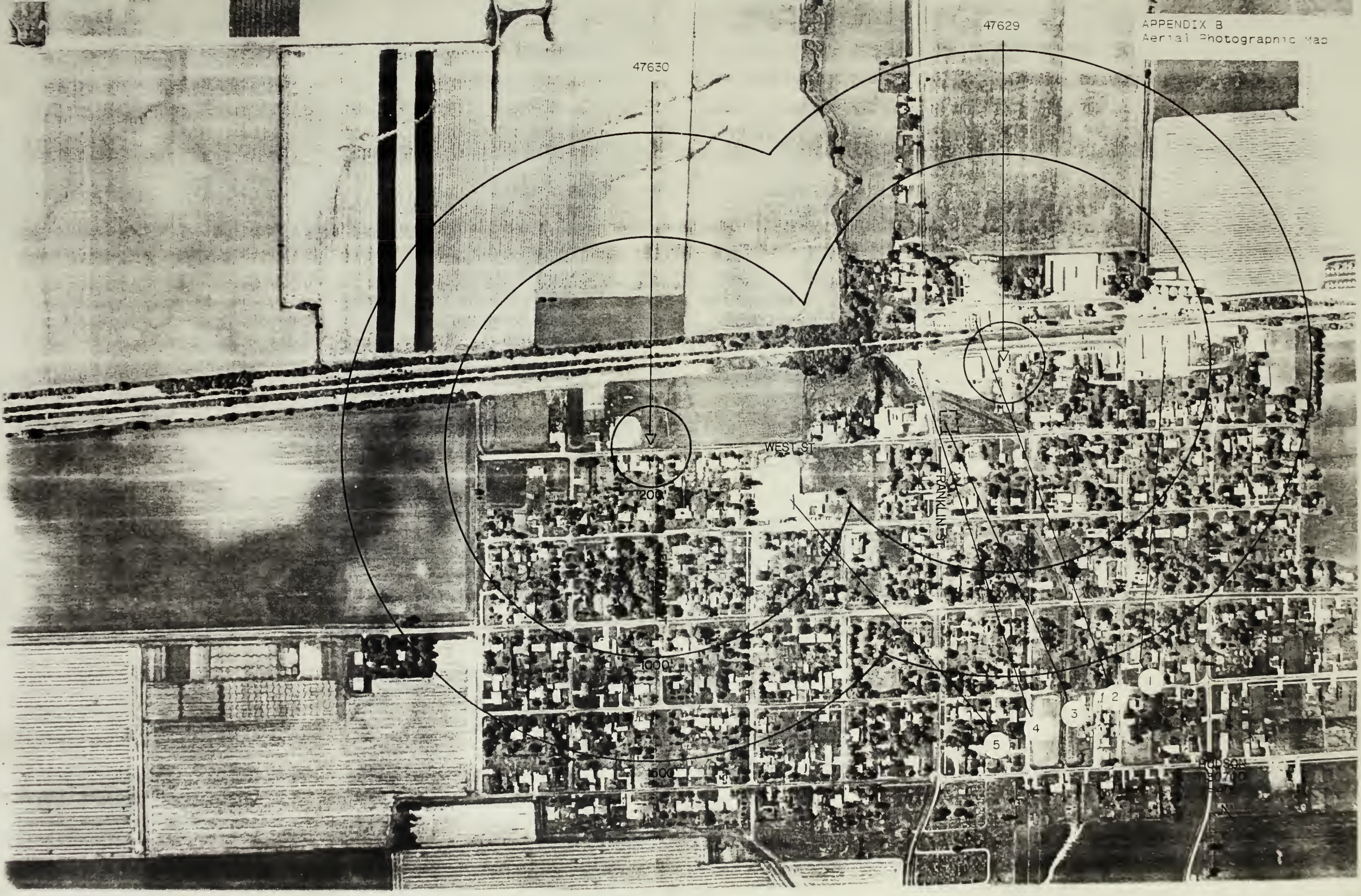
APPENDIX B  
Aerial Photographic Map





47629

47630



WEST ST

FRANKLIN ST

200

400

600

5

4

3

2

1

RED SOIL  
47630



**APPENDIX B1 WELL SITE SURVEY SUMMARY DESCRIPTION AND GEOLOGIC  
PROFILE-Hudson WELL #1 (IEPA #47629)**

SURVEYOR: W. Boring  
SURVEY DATE: 1/31/92  
ADDRESS: William Waller  
Village Hall  
Box 221  
Hudson, IL 61748  
47629  
AGENCY WELL NO.:  
WELL NAME & DESCRIPTION: Well #1  
TAP: 01  
FACILITY NO. & NAME: 1130700  
FACILITY PHONE CONTACT: 309/726-1471  
LOCATION:  
TWP, RNG, SECTION, 10 ACRE PLOT: 25N,2E,21,4A  
DISTANCE FROM CORNER SECTION: 400N, 2200W  
QUAD SHEET CODE & NAME: 111C Normal East  
MINIMUM SETBACK: 200 ft.  
MAXIMUM SETBACK:  
GEOLOGIC SUSCEPTIBILITY RATING: E- low permeability silty/clayey  
till  
AGE OF WELL: 1955  
WELL DEPTH: 160  
DEPTH OF CASING: 154  
AQUIFER CODE: 0101, Sand & Gravel  
MULTIPLE AQUIFER (Y, N): N  
SUMMARY DESCRIPTION OF 1,000 FT. RADIUS AREA:

The survey area is mostly  
rural. The area is a mixture  
of row crops, residential and  
commercial.

INTERVIEW(S):  
NAME-AFFILIATION-ADDRESS-TELEPHONE NO.

**APPENDIX B1: INVENTORY AND SYNOPSIS OF UNITS - Hudson WELL #1**  
**(IEPA #47629)**

<u>CLASSIFICATION KEY</u>	
<u>MINIMUM ZONE</u>	<u>OUTSIDE MINIMUM ZONE</u>
PP = POTENTIAL PRIMARY	OP = POTENTIAL PRIMARY
PS = POTENTIAL SECONDARY	OS = POTENTIAL SECONDARY
RI = ROUTE	OR = ROUTE
CC = CERTIFIED	CC = CERTIFIED
XI = UNKNOWN	OX = UNKNOWN
CU = CLEANUP	CU = CLEANUP

---

WELL NO. - MAP CODE - CLASSIFICATION: 47629-01-OS  
NAME & ADDRESS OF UNIT OWNER: McGrath Inc., Front and Walnut,  
Hudson, IL, 61748 309/726-1311  
DESCRIPTION AND COMMENTS: farm implement sales and service w/  
below ground fuel storage in excass of 500 gallons,  
ISFM #4-009397  
PRE OR POST (Y, N): Y  
DISTANCE AND DIRECTION: 700 ft. N

---

WELL NO. - MAP CODE - CLASSIFICATION: 47629-02-OS  
NAME & ADDRESS OF UNIT OWNER: Sun Ag Inc., Hudson, IL 61748  
DESCRIPTION AND COMMENTS: above ground storage of fertilizers and  
pesticides, APC #113070AAB  
PRE OR POST (Y,N): Y  
DISTANCE AND DIRECTION: 320 ft. SW

---

WELL NO. - MAP CODE - CLASSIFICATION: 47629-03-OS  
NAME & ADDRESS OF UNIT OWNER: Casey's General Store, West and  
Franklin, Hudson, IL 61748 515/965-6100  
DESCRIPTION AND COMMENTS: convenience store w/ below ground fuel  
storage in excess of 500 gallons, ISFM #4-023957  
PRE OR POST (Y,N): Y  
DISTANCE AND DIRECTION: 350 ft SE

---



---

WELL NO. - MAP CODE - CLASSIFICATION: 47629-04-0X  
NAME & ADDRESS OF UNIT OWNER: Hudson TWP, Hudson, IL 61748

DESCRIPTION AND COMMENTS: township garage w/ below ground fuel storage, no ISFM #

PRE OR POST (Y,N): Y  
DISTANCE AND DIRECTION: 400 ft S

---

WELL NO. - MAP CODE - CLASSIFICATION: 47629-05-  
NAME & ADDRESS OF UNIT OWNER: Hudson Elementary School, West St,  
Hudson, IL 61748 309/452-4476  
DESCRIPTION AND COMMENTS: elementary school w/ below ground fuel storage, ISFM #4-025734

PRE OR POST (Y,N): Y  
DISTANCE AND DIRECTION: 1,200 ft SE

---



**APPENDIX B2 WELL SITE SURVEY SUMMARY DESCRIPTION AND GEOLOGIC  
PROFILE - Hudson WELL #2 (IEPA #47630)**

SURVEYOR:	W. Boring
SURVEY DATE:	1/31/92
ADDRESS:	William Waller Village Hall Box 221 Hudson, IL 61748
AGENCY WELL NO.:	47630
WELL NAME & DESCRIPTION:	Well #2
TAP:	01
FACILITY NO. & NAME:	1130700
FACILITY PHONE CONTACT:	309/726-1471
LOCATION:	
TWP, RNG, SECTION, 10 ACRE PLOT:	25N, 2E, 28, 4F
DISTANCE FROM CORNER SECTION:	1500S, 2000W
QUAD SHEET CODE & NAME:	111C Normal East
MINIMUM SETBACK:	200 ft.
MAXIMUM SETBACK:	
GEOLOGIC SUSCEPTIBILITY RATING:	E-low permeability silty/clayey till
AGE OF WELL:	1967
WELL DEPTH:	96 ft.
DEPTH OF CASING:	81 ft.
AQUIFER CODE:	0101, Sand & Gravel
MULTIPLE AQUIFER (Y, N):	N
SUMMARY DESCRIPTION OF 1,000 FT. RADIUS AREA:	

The survey area is mostly rural. The area is a mixture of row crops, residential, and commercial.

**INTERVIEWS**

**NAME-AFFILIATION-ADDRESS-TELEPHONE NO.**

**APPENDIX B2: INVENTORY ANDSYNOPSIS OF UNITS - Hudson WELL #2 (IEPA #47630)**

**CLASSIFICATION KEY**

**MINIMUM ZONE**

PP = POTENTIAL PRIMARY  
PS = POTENTIAL SECONDARY  
RI = ROUTE  
CC = CERTIFIED  
XI = UNKNOWN  
CU = CLEANUP

**OUTSIDE MINIMUM ZONE**

OP = POTENTIAL PRIMARY  
OS = POTENTIAL SECONDARY  
OR = ROUTE  
CC = CERTIFIED  
OX = UNKNOWN  
CU = CLEANUP

---

WELL NO. - MAP CODE - CLASSIFICATION: 47630-01-  
NAME & ADDRESS OF UNIT OWNER: McGrath Inc., Front and Walnut,  
Hudson, IL, 61748 309/726-1311  
DESCRIPTION AND COMMENTS: farm implement sales and service w/  
below ground fuel storage in exccass of 500 gallons,  
ISFM #4-009397  
PRE OR POST (Y, N): Y  
DISTANCE AND DIRECTION: 2,400 ft. NNW

---

WELL NO. - MAP CODE - CLASSIFICATION: 47630-02-  
NAME & ADRESS OF UNIT OWNER: Sun Ag Inc., Hudson, IL 61748  
DESCRIPTION AND COMMENTS: above ground storage of fertilizers and  
pesticides, APC #113070AAB  
PRE OR POST (Y,N): Y  
DISTANCE AND DIRECTION: 1,650 ft. NW

---

WELL NO. - MAP CODE - CLASSIFICATION: 47630-03-  
NAME & ADRESS OF UNIT OWNER: Casey's General Store, West and  
Franklin, Hudson, IL 61748 515/965-6100  
DESCRIPTION AND COMMENTS: convenience store w/ below ground fuel  
storage in excess of 500 gallons, ISFM #4-023957  
PRE OR POST (Y,N): Y  
DISTANCE AND DIRECTION: 1,400 ft. N

---

---

WELL NO. - MAP CODE - CLASSIFICATION: 47630-04-  
NAME & ADDRESS OF UNIT OWNER: Hudson TWP, Hudson, IL 61748

DESCRIPTION AND COMMENTS: township garage w/ below ground fuel  
storage, no ISFM #

PRE OR POST (Y,N): Y  
DISTANCE AND DIRECTION: 1,250 ft. NNW

---

WELL NO. - MAP CODE - CLASSIFICATION: 47630-05-0X  
NAME & ADDRESS OF UNIT OWNER: Hudson Elementary School, West St,  
Hudson, IL 61748 309/452-4476  
DESCRIPTION AND COMMENTS: elementary school w/ below ground fuel  
storage, ISFM #4-025734

PRE OR POST (Y,N): Y  
DISTANCE AND DIRECTION: 650 ft. NE

---





## **APPENDIX C**



ILLINOIS ENVIRONMENTAL PROTECTION AGENCY  
DIVISION OF PUBLIC WATER SUPPLIES  
FACILITY WELLS REPORT

REPORT: PWGWP053  
MODULE: PWGWM027

FACILITY: 1130700 HUDSON

----- OWNER ----- OFFICIAL CUSTODIAN -----

WILLIAM WALLER

FRANK HEINEKE

MAYOR - VILLAGE HALL

VILLAGE HALL

BOX 221

BOX 221

HUDSON IL 61748

HUDSON IL 61748

WELL: 47629 WELL 1 IS INSIDE PLANT DOWNTOWN

STATUS: INACTIVE\* BACKUP

DEPTH(FT): 160

LATITUDE: N40 36 27.0

LONGITUDE: W088 59 31.0

TWP: 25N R4G: 02E SEC: 21 PLOT: 4A

SUSCEPTIBILITY - LAND BURIAL: E  
AQUIFERS: QUATERNARY SYSTEM

SUSCEPTIBILITY - LAND SPREADING: D2

--- MINIMUM SETBACK(FT): 200\* ---

WELL: 47630 WELL 2 IS IN PARK ATWEST AND FULTON STS

STATUS: INACTIVE\* BACKUP

DEPTH(FT): 96

LATITUDE: N40 36 16.0

LONGITUDE: W088 59 26.0

TWP: 25N R4G: 02E SEC: 28 PLOT: 4F

SUSCEPTIBILITY - LAND BURIAL: E  
AQUIFERS: QUATERNARY SYSTEM

SUSCEPTIBILITY - LAND SPREADING: D2

--- MINIMUM SETBACK(FT): 200\* ---

SUSCEPTIBILITY CODES

LAND BURIAL: E = UNIFORM, RELATIVELY IMPERMEABLE SILTY OR CLAYEY TILL AT LEAST 50 FT THICK; NO EVIDENCE OF INTERBEDDED SAND AND GRAVEL.

LAND SPREADING: D2 = UNIFORM, RELATIVELY IMPERMEABLE SILTY OR CLAYEY TILL AT LEAST 20 FT THICK; NO EVIDENCE OF INTERBEDDED SAND AND GRAVEL.

\*NOTE: INACTIVE WELLS SHOULD EITHER BE RETROFITTED FOR USE OR PROPERLY ABANDONED. INACTIVE WELLS WHICH ARE IMPROPERLY ABANDONED ARE CONSIDERED POTENTIAL ROUTES ACCORDING TO P.A. 85-0863.





## APPENDIX D







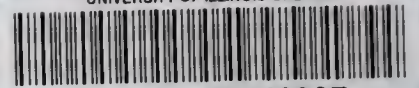
FACILITY: 1130700 HUDSON  
TAP: 01 INACTIVE IRON REMOVAL-SOFTENING PLANT  
STATUS: A PUBLIC: Y COMM: Y TYPE WATER: J  
STATUS: J  
STATUS: J  
RAM SRCE: 47629 WELL 1 IS INSIDE PLANT DOWNTOWN  
SAMPLE NO: B033440 LOCATION: WELL #1  
SMPL TYPE: RAW COLLECTOR: FRANK HEINEKE  
SMPL PURP: 1-ROUTINE COMMENTS:  
SMPL PROG: I-GWM INORG DBSRVATNS:  
COLL DATE: 01/12/81 DELIVERED BY:  
LAB RCVD: 02/09/81 RECEIVED BY:  
LAB COMPL: LAB SUPERVISOR:  
SMPL PERIOD: 01/81 FUND CODE:

ANALYSIS		RSLT		-----STOREI-----		UNITS		RESULT		-----STANDARDS-----		RAW WTR		TRIGGER	
ID	NO	NO	NO	DESCRIPTION											LEVEL
	00095			CONDUCTIVITY(CE)-LAB(CUMHDS/CM @ 25 C				1090.000							
	00403			PH LABORATORY UNITS				7.100							
	00410			ALKALINITY, TOTAL MG/L AS CaCO3				590.000							
	00610			NITROGEN, AMMONIA TOTAL MG/L AS N				8.300							
	00630			NITRATE & NITRITE TOTAL MG/L AS N				0.100 <					10.000		
	00720			CYANIDE, TOTAL MG/L AS CN				0.005					0.200		
	00900			HARDNESS, EDTA MG/L AS CaCO3				398.000							
	00916			CALCIUM, TOTAL RECOVERABLE MG/L AS Ca ANAL BY ICP				88.000							
	00927			MAGNESIUM, TOTAL RECOVERABLE MG/L AS Ca ANAL BY ICP				48.000							
	00929			SODIUM, TOTAL RECOVERABLE MG/L AS Na ANAL BY ICP				28.000							
	00937			POTASSIUM, TOTAL RECOVERABLE MG/L AS K ANAL BY ICP				2.200							
	00940			CHLORIDE, TOTAL MG/L AS CL				23.000							
	00945			SULFATE, TOTAL MG/L AS SO4				13.000							
	00951			FLUORIDE, TOTAL MG/L AS F				0.570					4.000		
	00956			SILICA, TOTAL MG/L AS SiO2				16.000							
	01002			ARSENIC, TOTAL RECOVERABLE UG/L AS AS				36.000					50.000		
	01007			BARIUM, TOTAL RECOVERABLE UG/L AS Ba ANAL BY ICP				514.000					1000.000		
	01012			BERYLLIUM, TOTAL RECOVERABLE UG/L AS Be ANAL BY ICP				0.500 <							
	01022			BORON, TOTAL RECOVERABLE UG/L AS B ANAL BY ICP				12.000							
	01027			CADMIUM, TOTAL RECOVERABLE UG/L AS Cd ANAL BY ICB				4.000					10.000		
	01034			CHROMIUM, TOTAL RECOVERABLE UG/L AS Cr ANAL BY ICB				5.000 <					50.000		
	01037			COBALT, TOTAL RECOVERABLE UG/L AS Co ANAL BY ICP				5.000 <							
	01042			COPPER, TOTAL RECOVERABLE UG/L AS Cu ANAL BY ICP				227.000					5000.000		
	01045			IRON, TOTAL RECOVERABLE, UG/L AS Fe ANAL BY ICP				9954.000					1000.000*		
	01051			LEAD, TOTAL RECOVERABLE UG/L AS Pb				99.000					50.000*		
	01055			MANGANESE, TOTAL RECOVERABLE UG/L AS Mn ANAL BY ICP				71.000					150.000		
	01067			NICKEL, TOTAL RECOVERABLE UG/L AS Ni ANAL BY ICP				3.000 <							
	01077			SILVER, TOTAL RECOVERABLE UG/L AS Ag ANAL BY ICP				5.000 <					50.000		
	01082			STRONTIUM, TOTAL RECOVERABLE UG/L AS Sr ANAL BY ICP				998.000							
	01087			VANADIUM, TOTAL RECOVERABLE UG/L AS V ANAL BY ICP				4.000 <							
	01092			ZINC, TOTAL RECOVERABLE UG/L AS Zn ANAL BY ICP				992.000					5000.000		
	01147			SELENIUM, TOTAL RECOVERABLE UG/L AS Se				1.000 <					10.000		
	70300			RESIDUE, TOTAL FILTERABLE 2180 C.MG/L				617.000							
	70304			TOTAL DISSOLVED SOLIDS MG/L BY EC				650.000							
	71900			MERCURY, TOTAL UG/L AS Hg				0.100 <					2.000		





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